

“Overcoming obstacles and creating positive change”

By Sylvie DeLaHunt

My essay addresses the obstacles still facing women in engineering, as well as the positive change that has occurred at my institution to begin tackling the gender gap. I discuss the positive change that I have been involved in through a new student group for the women in my department, and our goals for improving the educational environment to attract and retain more female students. My goal is to make more people aware of the adversity facing underrepresented students, while providing hope that changes are coming slowly but surely.

For a discipline that thrives on diversity of ideas, engineering faces a clear lack of diversity. Most notable is its gender gap: women are significantly underrepresented, despite making up half the general population. Girls grow up exposed to cultural stereotypes that reinforce the antiquated message that women do not belong in engineering. This conditioning manifests itself in the psychological phenomena of imposter syndrome and stereotype threat. When women arrive at universities, these negative thoughts are reinforced by institutional problems inherent to the structure of traditional engineering programs. Even today, the onus is on women to conform to this unwelcoming environment; however, it is really universities that need to change to attract female students.

At the University of Maryland, only 22% of undergraduate engineering students and 13% of aerospace students are women. Throughout the country, similar underrepresentation, combined with weed-out courses and arbitrary grading curves, discourages female students. Low raw scores disproportionately deter underrepresented students, regardless of their academic standing, by reinforcing the idea that they are unqualified. Furthermore, unclear selection criteria for awards make it easier to claim that women receive honors in place of more qualified male applicants, further undermining their confidence. (Some male peers suggested this helped me win my NSF Graduate Research Fellowship.) Women additionally face unconscious biases, even from well-meaning classmates, and studies highlight the undervaluing of female contributions in engineering.

The A. James Clark School of Engineering has been a leader in addressing the gender gap, creating the Keystone Program to improve first-year retention rates and the Women in Engineering (WIE) Program to recruit and retain female students. By offering a Living and Learning Community, mentorship, and involvement opportunities, the WIE program has taken great strides towards creating a more supportive community for women. Through its WIE Dream Conference and outreach events, the program is also working to counter gender stereotypes and encourage young girls to pursue engineering. However, the program is still limited in scope, because it cannot mandate necessary institutional changes at the departmental or collegiate levels.

Female students have also stepped up to help foster positive change at Maryland. I have personally been involved as a founding board member for our new Women in

Aeronautics and Astronautics organization. Our mission is to empower women through professional networking and development, and to foster discussion between students and professionals about overcoming obstacles. We want students to know they are not facing challenges alone and to encourage them to stay motivated throughout their engineering education and careers.

My primary goal for the organization is advocacy on behalf of female students. If we work with students to collectively develop proposals for improving the engineering atmosphere for women, and then with faculty representatives to make changes at the departmental level, we can create a better educational environment. The next step will be to support the development of similar organizations and advisory boards to promote diversity in all its forms. Engineering programs must work with underrepresented groups to address the institutional challenges that continue to deter underrepresented students.